

or R<sub>1</sub> and R<sub>2</sub> are joined to form a ring;

R<sub>3</sub> and R<sub>4</sub> are independently selected from the group consisting of H, R, and ArR-,  
or R<sub>3</sub> and R<sub>4</sub> are joined to form a ring; *3-7 members*

R<sub>5</sub> is selected from the group consisting of H, R, ArR-, and Ar;

R<sub>6</sub> is selected from the group consisting of H, R, and ArR-;

R<sub>7</sub> and R<sub>8</sub> are independently selected from the group consisting of: H, R, and ArR-;

and

R<sub>9</sub> is: 
$$Z - \overset{\text{O}}{\underset{\parallel}{\text{C}}} - Y -$$
 ;

R is a saturated or unsaturated moiety having a linear, branched, or non-aromatic cyclic skeleton containing one to ten carbon atoms, zero to four nitrogen atoms, zero to four oxygen atoms, and zero to four sulfur atoms, and the carbon atoms are optionally substituted with: =O, =S, -OH, -OR<sub>10</sub>, -O<sub>2</sub>CR<sub>10</sub>, -SH, -SR<sub>10</sub>, -SOCR<sub>10</sub>, -NH<sub>2</sub>, -NHR<sub>10</sub>, -N(R<sub>10</sub>)<sub>2</sub>, -NHCOR<sub>10</sub>, -NR<sub>10</sub>COR<sub>10</sub>, -I, Br, -Cl, -F, -CN, -CO<sub>2</sub>H, -CO<sub>2</sub>R<sub>10</sub>, -CHO, -COR<sub>10</sub>, -CONH<sub>2</sub>, -CONHR<sub>10</sub>, -CON(R<sub>10</sub>)<sub>2</sub>, -COSH, -COSR<sub>10</sub>, -NO<sub>2</sub>, -SO<sub>3</sub>H, -SOR<sub>10</sub>, -SO<sub>2</sub>R<sub>10</sub>, wherein R<sub>10</sub> is a linear, branched or cyclic, one to ten carbon atom saturated or unsaturated alkyl group;

the ring formed by joining R<sub>1</sub> and R<sub>2</sub> or by joining R<sub>3</sub> and R<sub>4</sub> is a three to seven member non-aromatic cyclic skeleton within the definition of R,

X is a moiety selected from the group consisting of -OH, -OR, =O, =S, -O<sub>2</sub>CR, -SH, -SR, -SOCR, -NH<sub>2</sub>, -NHR, -N(R)<sub>2</sub>, -NHCOR, -NRCOR, -I, -Br, -Cl, -F, -CN, -CO<sub>2</sub>H, -CO<sub>2</sub>R, -CHO, -COR, -CONH<sub>2</sub>, -CONHR, -CON(R)<sub>2</sub>, -COSH, -COSR, -NO<sub>2</sub>, -SO<sub>3</sub>H, -SOR, and -SO<sub>2</sub>R;

Ar is an aromatic ring selected from the group consisting of phenyl, naphthyl, anthracyl, phenanthryl, furyl, pyrrolyl, thiophenyl, benzofuryl, benzothiophenyl, quinolinyl, isoquinolinyl, imidazolyl, thiazolyl, oxazolyl, and pyridinyl, optionally substituted with R or X;

Y is a linear, unsaturated, two to six carbon atom alkyl group, optionally substituted with R, ArR-, or X; and,

Z is a moiety selected from the group consisting of: -OH, -OR; -SH; -SR; -NH<sub>2</sub>; -NRCH(R<sub>11</sub>)COOH; and -NRCH(R<sub>11</sub>)COOH, wherein R<sub>11</sub> is a moiety having the formula: R, or -(CH<sub>2</sub>)<sub>n</sub>NR<sub>12</sub>R<sub>13</sub>, wherein n=1-4 and R<sub>12</sub> and R<sub>13</sub> are independently selected from the group consisting of H; R; and -C(NH) (NH<sub>2</sub>);

and wherein:

if R<sub>8</sub> is H, Y may only be substituted with R' or Ar'R'-, in which

R' is a saturated linear, branched, or cyclic skeleton containing one to ten carbon atoms, and *could be side chain of gln*

Ar' is an aromatic ring selected from the group consisting of phenyl, naphthyl, anthracyl and phenanthryl, optionally substituted with R' or pharmaceutically acceptable salt thereof

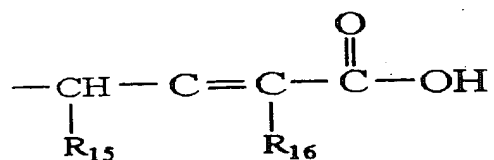
23. (New) The compound of claim 22, wherein Ar is phenyl, naphthyl, anthracyl, or pyrrolyl.
24. (New) The compound of claim 22, where R<sub>5</sub> is naphthyl, anthracyl, or pyrrolyl.
25. (New) The compound of claim 22, wherein R<sub>5</sub> is phenyl.
26. (New) The compound of claim 22, wherein R<sub>5</sub> is H.
27. (New) The compound of claim 22, wherein R<sub>5</sub> is R.
28. (New) The compound of claim 27, wherein R<sub>5</sub> is methyl.
29. (New) The compound of claim 22, wherein one of R<sub>3</sub> and R<sub>4</sub> is H and the other of R<sub>3</sub> and R<sub>4</sub> is ArR-.
30. (New) The compound of claim 22, wherein R<sub>3</sub> and R<sub>4</sub> are each R.
31. (New) The compound of claim 30, wherein R<sub>3</sub> and R<sub>4</sub> are independently selected from the group consisting of: methyl, ethyl, n-propyl and n-butyl.

32. (New) The compound of claim 31, wherein  $R_3$  and  $R_4$  are each  $-CH_3$ .
33. (New) The compound of claim 32, wherein  $R_5$  is Ar.
34. (New) The compound of claim 22, wherein  $R_3$  and  $R_4$  are joined and form a moiety selected from the group consisting of  $\beta$ -cyclopropyl,  $\beta$ -cyclobutyl,  $\beta$ -cyclopentyl and  $\beta$ -cyclohexyl.
35. (New) The compound of claim 22, wherein  $R_1$  and  $R_2$  are independently selected from the group consisting of H, methyl, ethyl, propyl, n-butyl and acetyl.
36. (New) The compound of claim 22, wherein  $R_1$  and  $R_2$  are joined and form a moiety selected from the group consisting of cyclopropyl, cyclobutyl, cyclopentyl and cyclohexyl.
37. (New) The compound of claim 22, wherein  $R_1$  and  $R_2$  are independently H,  $CH_3$  or acetyl.
38. (New) The compound of claim 22, wherein  $R_1$  and  $R_2$  are independently H or  $CH_3$ .
39. (New) The compound of claim 38, wherein  $R_1$  is H, and  $R_2$  is  $-CH_3$ .

40. (New) The compound of claim 38, wherein  $R_5$  is Ar.
41. (New) The compound of claim 38, wherein  $R_3$  and  $R_4$  are each  $-CH_3$ .
42. (New) The compound of claim 41, wherein  $R_5$  is Ar.
43. (New) The compound of claim 42, wherein  $R_5$  is phenyl.
44. (New) The compound of claim 22, wherein  $R_6$  is H or  $CH_3$ .
45. (New) The compound of claim 42, wherein  $R_6$  is H or  $CH_3$ .
46. (New) The compound of claim 45, wherein  $R_6$  is H.
47. (New) The compound of claim 22, wherein  $R_8$  is H or  $CH_3$ .
48. (New) The compound of claim 42, wherein  $R_8$  is H or  $CH_3$ .
49. (New) The compound of claim 45, wherein  $R_8$  is H or  $CH_3$ .
50. (New) The compound of claim 49, wherein  $R_8$  is  $CH_3$ .

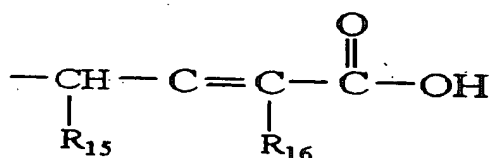
51. (New) The compound of claim 22, wherein  $R_6$  is H and  $R_8$  is  $\text{CH}_3$ .
52. (New) The compound of claim 42, wherein  $R_6$  is H and  $R_8$  is  $\text{CH}_3$ .
53. (New) The compound of claim 22, wherein  $R_7$  is a three to six carbon atom, branched alkyl group.
54. (New) The compound of claim 42, wherein  $R_7$  is a three to six carbon atom, branched alkyl group.
55. (New) The compound of claim 45, wherein  $R_7$  is a three to six carbon atom, branched alkyl group.
56. (New) The compound of claim 49, wherein  $R_7$  is a three to six carbon atom, branched alkyl group.
57. (New) The compound of claim 53, wherein  $R_7$  is  $-\text{C}(\text{CH}_3)_3$ .
58. (New) The compound of claim 22, wherein  $R_6$  is H,  $R_7$  is  $-\text{C}(\text{CH}_3)_3$ , and  $R_8$  is  $-\text{CH}_3$ .

59. (New) The compound of claim 22, wherein Z is  $\text{-NHCH(R}_{11}\text{)COOH}$  or  $\text{-NCH}_3\text{CH(R}_{11}\text{)COOH}$ , wherein  $\text{R}_{11}$  is R; or,  $\text{-(CH}_2\text{)}_n\text{NHC(NH)(NH}_2\text{)}$ .
60. (New) The compound of claim 22, wherein Z is  $\text{-OR}_{14}$  in which  $\text{R}_{14}$  is a linear or branched one to six carbon alkyl group.
61. (New) The compound of claim 22, wherein Z is OH.
62. (New) The compound of claim 22, wherein Z is  $\text{-OCH}_3$ .
63. (New) The compound of claim 22, wherein  $\text{R}_9$  has the formula:



wherein  $\text{R}_{15}$  is selected from the group consisting of methyl, ethyl, n-propyl, isopropyl, tert-butyl, iso-butyl, and sec-butyl; and  $\text{R}_{16}$  is selected from the group consisting of H, methyl, ethyl, propyl, iso-propyl, n-butyl, iso-butyl and sec-butyl.

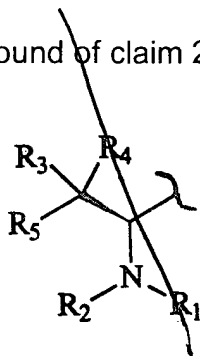
64. (New) The compound of claim 63, wherein  $R_{16}$  is methyl.
65. (New) The compound of claim 63, wherein  $R_{15}$  is isopropyl and  $R_{16}$  is methyl.
66. (New) The compound of claim 55, wherein  $R_9$  has the formula:



wherein  $R_{15}$  is selected from the group consisting of: methyl, ethyl, n-propyl, isopropyl, tert-butyl, iso-butyl, and sec-butyl; and  $R_{16}$  is selected from the group consisting of H, methyl, ethyl, propyl, iso-propyl, n-butyl, iso-butyl and sec-butyl.

67. (New) The compound of claim 66, wherein Z is OH or  $-OR_{14}$  in which  $R_{14}$  is a linear or branched one to six carbon alkyl group.

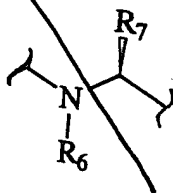
68. (New) The compound of claim 22, having the configuration:



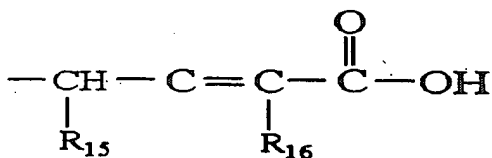


69. (New) The compound of claim 22, wherein Y comprises a chiral centre having an s-configuration.

70. (New) The compound of claim 22, having the configuration:

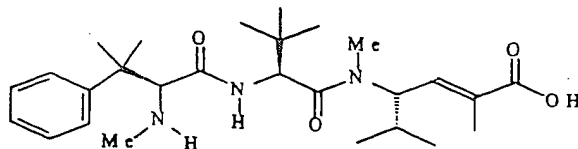


71. (New) The compound of claim 70, wherein R<sub>5</sub> is Ar; R<sub>3</sub> and R<sub>4</sub> are each CH<sub>3</sub>; R<sub>1</sub>, R<sub>2</sub>, R<sub>6</sub> and R<sub>8</sub> are independently H or CH<sub>3</sub>; R<sub>7</sub> is a three to six carbon branched alkyl group; and, R<sub>9</sub> has the formula



wherein R<sub>15</sub> is selected from the group consisting of methyl, ethyl, n-propyl, isopropyl, tert-butyl, iso-butyl, and sec-butyl; and R<sub>16</sub> is selected from the group consisting of H, methyl, ethyl, propyl, iso-propyl, n-butyl, iso-butyl and sec-butyl.

72. (New) The compound of claim 22, wherein the compound has the structure:



in which Me is CH<sub>3</sub>.

73. (New) A pharmaceutical composition suitable for treating tumors comprising an anti-tumor effective amount of at least one compound of claim 1 and acceptable pharmaceutical excipient.

74. (New) A method of treating tumors by arresting cell mitosis in a patient in need of such treatment comprising administering to said patient an anti-mitotic effective amount of at least one compound of claim 1.

#### REMARKS

Claims 1-21 are pending in the application. Claims 19-21 have been withdrawn from consideration as being directed to a non-elected invention and are cancelled without prejudice by this amendment. Claims 1-18 are also cancelled without prejudice by this